

IN THE CLAIMS:

Please amend claims 1-14 as follows:

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1. (Currently Amended) A circuit for a device adapted to receive a
conductive solution including charged biological materials ~~control of an output current in a~~
~~multiple unit cell array~~, comprising:

an array of unit cells arranged in rows and columns, the array of unit cells
disposed on a chip for receiving a conductive solution including charged biological
materials, wherein each unit cell comprises:

a first column select transistor, the first column select transistor being
adapted for control by a column selector,

a first row select transistor, the first row select transistor being adapted
for control by a row selector, the first select transistors being connected in series to each
other and between a node and a first supply,

an output connected to the node,

a second column select transistor, the second column select transistor
being adapted for control by a column selector,

a second row select transistor, the second row select transistor being
adapted for control by a row selector, the second select transistors being connected in
series to each other and between the node and a second supply, and

a return electrode.

2. (Currently Amended) The circuit of claim 1 ~~for control of an output current in an active biological control reaction system~~ wherein the output is directly connected to the node.

3. (Currently Amended) The circuit of claim 1 ~~for control of an output current in an active biological control reaction system~~ wherein the row select transistors and the column select transistors are field effect transistors.

4. (Currently Amended) The circuit of claim 1 ~~for control of an output current in an active biological control reaction system~~ wherein the first and second row select transistors are CMOS transistors.

5. (Currently Amended) The circuit of claim 1 ~~for control of an output current in an active biological control reaction system~~ wherein the first and second column select transistors are CMOS transistors.

6. (Currently Amended) The circuit of claim 5 ~~for control of an output current in an active biological control reaction system~~ wherein the channel length of the column select transistors is larger than the channel length of the row select transistors.

B2 7. (Currently Amended) The circuit of claim 1 ~~for control of an output current in an active biological control reaction system~~ further including a first test transistor spanning the first supply and the node.

8. (Currently Amended) The circuit of claim 7 ~~for control of an output current in an active biological control reaction system~~ wherein the first test transistor is adapted for control by a test signal.

9. (Currently Amended) The circuit of claim 8 ~~for control of an output current in an active biological control reaction system~~ further including a second test transistor spanning the second supply and the node.

10. (Currently Amended) The circuit of claim 9 ~~for control of an output current in an active biological control reaction system~~ wherein the second test transistor is adapted for control by a test signal.

11. (Currently Amended) The circuit of claim 1 ~~for control of an output current in an active biological control reaction system~~ wherein the first supply is Vcc.

12. (Currently Amended) The circuit of claim 1 ~~for control of an output current in an active biological control reaction system~~ wherein the second supply is ground.

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13. (Currently Amended) The circuit of claim 1 ~~for control of an output current in an active biological control reaction system~~ wherein the first and second column select transistors are controlled under application of a gate voltage from a column shift register memory.

14. (Currently Amended) The circuit of claim 1 ~~for control of an output current in an active biological control reaction system wherein the first and second row select transistors~~ are controlled under application of a gate voltage from a row shift register memory.

15. (Cancelled)

16. (Cancelled)

17. (Currently Previously Amended) The circuit of claim 1 wherein the return electrode is another unit cell.

18. (Cancelled)

19. (Cancelled)

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20. (Cancelled)